ROC-SOLID

80W and 120W Portable Folding Solar Panel

User manual

Congratulations on your purchase of a ROC SOLID Folding Solar panel. Your unit is fully assembled and factory tested, all you need to do is attach the battery cable to the battery and plug into the panel.

These units are designed to charge a 12 volt battery and are suitable for Deep Cycle, Float and Automotive Cranking batteries of the following types.

- ✓ Flooded Lead Acid (wet)
- ✓ Sealed Lead Acid (vented)
- ✓ Gel Cell
- ✓ AGM
- ✓ Spiral

Danger: These units must not be used on batteries not designed to be recharged or batteries which cannot accept the charging current or charging voltages as per the specifications.

Features

Your ROC SOLID folding solar panel is one of the most sophisticated solar charging systems available and understanding the features will help you maximise its benefits.

- MPPT Regulator – The regulator is the “brains” of the system. Your solar panel is equipped with one of the most advanced and sophisticated ROC SOLID designed and built Maximum Power Point Tracking (MPPT) regulators. These regulators will provide up to 30% more charging current from the solar panel than conventional regulators. This performance is most evident in poor light or overcast situations when you really need to maximise what sun power is available. The MPPT regulator has over double the capacity of the solar panel to cater for a plug in Auxiliary solar panel without the need to upgrade the regulator.

- Solar panels - An efficient and high reliability poly crystalline construction with toughened glass protection shield will give you years of trouble free use. The solar cells have a 25 year performance warranty for your peace of mind.

- Adjustable angle - The solar panel has a 6 (80W unit) or 5 (120W unit) position angle adjustment to ensure the panel is accurately positioned to face the sun and to further maximise energy production.

- All components are designed to withstand weathering and rust and are made of Glass, Aluminium, Stainless Steel or Plastic

- Plug-in Heavy Duty fused Battery Cable and Clips - The battery lead is made with oversized heavy duty cable (2 x 4sq mm) to minimise voltage drop during heavy charging. Typically the cable is double the size that's normally required. Two strong and colour coded heavy duty battery clips are provided to ensure reliable and positive connection to the battery. A 20Amp automotive fuse is built into the cable at the clip end for extra safety and security in the unlikely event that the cable is damaged.

- Carry Bag - The carry bag has two solid solar panel protection inserts to further protect the solar panels during storage and transport. Each bag is made of quality breathable canvas to reduce condensation and retention of moisture which is a common problem when synthetic material is used. Tie down loops are provided to assist in securing the panel during transport. A generous utility section is included to store cables and accessories.

- Fully Expandable - All solar panels are pre wired and have connecting plug to fit an auxiliary solar panel to double the capacity of the charger. The regulator and wiring is designed to cater for an Auxiliary unit without needing upgrading.

When you open the bag..

Your Portable Folding Solar Panel includes

1) Folding Solar Panel complete with MPPT regulator
2) Plug In Heavy Duty 5 meter long fused Battery Lead
3) Canvas carry Bag with side wall protection

An Auxiliary Folding Solar Panel Unit will include:

1) Folding Solar Panel auxiliary unit
2) Heavy Duty Plug In 2 meter interconnection cable
3) Canvas carry Bag with side wall protection
4) User manual

How to use your Folding Solar Panel

Where do I put it?

Your panel should be:

- North facing for Australia, New Zealand, South Africa (Southern Hemisphere) and South facing for Europe, USA, Canada (Northern Hemisphere)
- Less than 5 meters from the battery being charged
- The cable from the solar panel to the battery should not cross walkways, vehicle roads or access ways or be permanently immersed in water
- Clear view of the sky so that direct sunlight for the entire day is not blocked by buildings, vehicles, caravans or trees
- Reasonably flat ground

How do I set it up?

The following sequence is important and must be followed exactly

1) Remove the Solar panel from the canvas carry bag
2) Hold the panels so the ROC SOLID label on the face of the panel is at the top left hand corner.
3) Release both latches from the side of the panel and open the unit fully
4) Adjust the legs so that the panel is supported and directly facing the sun's expected noon (mid day) position (if unsure, set the legs to any position and adjust later) Generally the first two notches are suitable for the southern parts of Australia and the last two for the Far North. Note, in the Southern hemisphere the panel should point in a Northerly direction and South in the Northern hemisphere.
5) If the location is windy or there is a likelihood that the panel may be blown over, weigh down the legs with a sand bag or use a tent peg to secure the legs to the ground.
6) Before connecting the Battery cable to either the solar panels or battery, position the cable on the ground with the battery clips at the battery end and the grey plug at the solar panel end.

7) Connect the BLACK battery clip to the NEGATIVE terminal of the Battery, then the RED battery Clip to the POSITIVE terminal.

CAUTION: Recheck that the BLACK clip is connected to the NEGATIVE terminal and the RED clip to the POSITIVE terminal. Ensure the battery clips will not touch each other or any other object.

7) Connect the Grey plug at the other end of the battery cable into the Battery connection (grey plug) on the solar panel (do not attempt to plug it into the RED plug – these plugs are keyed so that only grey plugs will fit grey plugs and red to red, however forcing the wrong type of plug may cause damage)
8) The Panel will start charging automatically when there is sufficient sun. The charge LED on the regulator (viewed via an inspection hole in the regulator cover) will illuminate to indicate charging. The MPPT regulator will automatically start and stop and control the charging when necessary. The unit is safe to leave connected over night or extended periods and will not drain the battery.

When you are finished….

The following sequence is important and must be followed exactly

If an Auxiliary unit is connected, disconnect by unplugging the interconnection cable from the main solar panel.

1) Unplug the battery cable at the solar panel by unplugging the GREY terminal.
2) You may now proceed to remove the RED battery Clip from the battery positive terminal then the BLACK battery clip from the Battery Negative terminal.
3) Release the solar panel legs and fold the legs flat then close the panels and secure the side latches.
4) Place the panels in the canvas bag. The cables may be stored in the side pocket of the bag.

I need more power!

Auxillary folding panel sets can be purchased to expand your power generating to a maximum of 250W.

Connecting the Expansion panel

The expansion panel may be connected at anytime, even if the main solar panel is connected to the battery.

1) Remove the Auxiliary Solar panel from the canvas carry bag
2) Hold the panels so the ROC SOLID label on the face of the panel is at the top
3) Release both latches from the side of the panel and open the unit fully
4) Adjust the legs so that the panel is supported and directly facing the suns expected noon (mid day) position similar to the main solar panel. NOTE, position the Auxiliary panel next to the main panel so that its orientation is identical and ensure that neither the main solar panel nor the Auxiliary panel will cast a shadow on the other panel.
5) If the location is windy or there is a likelihood that the panel may be blown over, weigh down the legs with a sand bag or use a tent peg to secure the legs to the ground.
6) Connect the Auxiliary panel into the Main solar panel using the inter-connection cable (red plug at both ends). Plug the cable into the RED plug on the Auxiliary unit then plug into the Auxiliary connector (RED) on the main solar panel.
7) Both Panels will start charging automatically when there is sufficient sun. The MPPT regulator will automatically sense the additional solar panels and adjust the charging. The unit is safe to leave connected over night and will not drain the battery.

Specification

	80 Watt panel	120 watt panel
Nominal Battery Voltage	12 Vdc	12 Vdc
Float Voltage	13.8 Vdc	13.8 Vdc
Maximum charging current	6.7 Adc	10 Adc
Dimension Closed	610 x 540 x 80 mm	810 x 540 x 80mm
Dimension Open	610 x 1090 x 80mm	810 x 1090 x 80mm
Weight	13.20Kg	15.90Kg
Regulator Type	**Maximum Power Point Tracking**	**Maximum Power Point Tracking**
Regulator Model	PS 2012 BC	PS 2012 BC
Short Circuit	Protected	Protected
Overcharge	Protected	Protected
Reverse Battery Connection	Protected	Protected
Battery Lead Fuse	20 amp Automotive Blade	20 amp Automotive Blade
Battery Lead dimension	5M x twin 4sqmm cable	5M x twin 4sqmm cable
Auxiliary Panel size	80 Watts	120 Watts
Auxiliary Panel Dimensions Closed	610 x 540 x 80 mm	810 x 540 x 80mm
Auxiliary Panel Dimensions Open	610 x 1090 x 80mm	810 x 1090 x 80mm

LIMITED 12 MONTH WARRANTY

ROC SOLID OWNER WARRANTY POLICY March 2012.

ROC SOLID warrants that, during the warranty period specified below, it will repair or replace, free of charge, any part(s) that is defective in material or workmanship or both. Transportation charges on product submitted for repair or replacement under this warranty must be borne by purchaser. This warranty is effective for and is subject to the time periods and conditions in this statement. For warranty service, return the item to your place of purchase or visit www.roc-solidsolar.com.au for an authorized service centre. The purchaser must contact the Authorized Service Centre, and then make the item available to the Authorized Service Centre for inspection and testing. Your original proof of purchase must be presented to the Authorised Service Centre at the time you submit your warranty claim.

There is no other expressed warranty or implied warranties, including those of merchantability and fitness for a particular purpose, are limited to one year from purchase, or to the extent permitted by law. All other implied warranties are excluded. Liability for incidental or consequential damages are excluded to the extent exclusion is permitted by law. Some states or countries do not allow limitations on how long an implied warranty lasts, and some states or countries do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state and country to country.

ROC-SOLID